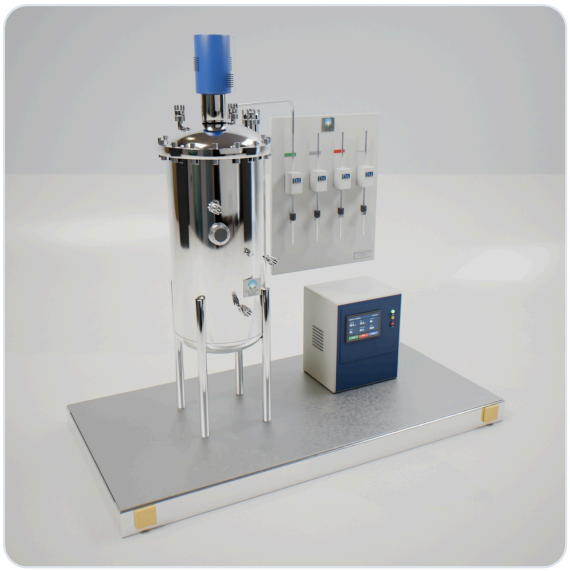
PRODUCT DATASHEET

Pressurised Gas-Fermentation Pilot Reactor

Pressurised bioreactors fed with CO_2, hydrogen or methane

Product page





Close-up: reactor vessel and gas inlet

OVERVIEW

The Tech Inc. Pressurised Gas-Fermentation Pilot Reactor grows microbes on gases such as CO_2 with hydrogen, methane or syngas in a pressurised, sterilisable vessel. Raising the pressure dissolves more gas, so the culture grows faster, and a gas panel with sterile filters and safety interlocks controls each feed.

TYPICAL DESIGN DATA

Pressure	To about 10 barg
Temperature	To about 80 °C operating, steam sterilisation at about 121 °C
Gases	CO_2, hydrogen, methane, oxygen, syngas and nitrogen
Codes and standards	Pressure parts to ASME VIII Div. 1 or PED; hazardous-area components where flammable gases are used
Materials	316L, polished
Safety	Gas ratio interlocks, relief, gas detection interface
Control	PLC with data logging

MODELS AND CAPACITIES

- **TI-GFR-5** – about 5 L
- **TI-GFR-20** – about 20 L
- **TI-GFR-100** – about 100 L
- **TI-GFR-500** – about 500 L

Indicative working volumes.

ORDERING CODE

Example **TI-GFR-20-S-H**: **20** working volume, litres; **S** type: S stirred, B bubble column, L loop; **H** gas set: H CO_2 + H_2, M methane, Y syngas.

SCOPE OF SUPPLY

Included: factory acceptance test with a written report; drawings for approval, material certificates and manual.
Options: off-gas analyser; gas detection; second reactor; bubble column or loop design; remote access.

KEY ADVANTAGES

- **Faster growth** – pressure raises gas transfer
- **Sterile** – steam-sterilisable with sterile filters
- **Safe gas control** – mass-flow controllers and interlocks
- **Research-ready** – logged data and off-gas analysis

How to cite: Pressurised Gas-Fermentation Pilot Reactor (model TI-GFR; Tech Inc., Vaughan, Ontario, Canada). www.techincresearch.com/product-page/gas-fermentation-pilot-reactor

Designed and built by Tech Inc. · **Part of the Davey Group since 1990**

Offices: Chennai · Toronto · Tallinn · Al Khobar

mail@techincresearch.com · +1 (289) 622-1032 · www.techincresearch.com

Disclaimer: All products, designs and content are the property of Tech Inc. Tech Inc. reserves the right to change specifications and details without notice. Images are for representation only; the supplied equipment may differ in appearance. Data are typical; final design to client specification.